es Canadian poys, and me re finer chests before they ever do afterward n five or six hours a day most of the rest of the de A to weaken the chest; for 1. you do not breathe you Take one large full breat w your chest rises and ex differently from a minut actually do not breath ce in a whole week. Is have weak cheets, and the cold? How are you b if you do not use them strong arms—the invalid bed, or the blacksmith ms, or he who does not?

re sitting still. Now th ery day from now or e, it would almost double tiveness as a nation. Fo t only enlarges the ches er and kidneys; indeed irectly to the vigor of th hire a sick man to worl Not that we can always it is less likely to come

training than when w e get a good chest? I ding both inside and out horough breathing doe dates the chest as you d a blow it up; and using les vigorously builds u

rk to enter, when we are

ld your neck well back our backbone, and a hed into man's nostril who goes around with you in your later years of it, breathing for more than six weeks Helen was seri-domestic life." plenty of it, breathing ceply as you can all the lungs grand work, and invigorating out-door g do the deepest, slow-

low many breaths you foot-ball. It may no in one breath, as the achelor friends. mple!

se breathe it as full is or any other exer-

and elbows, and chin out in front of you, throw your hands onal line, never bendthey are as far back . Do fifty of these enty five, at a time, hest has suddenly beork for round shoulers are a deformity, the one chiefly to ow how to straighten neck back, your back knees straight, you you tried to. ls high above your

there; now lean hold it there; then ill they are far out r hands were on a ver once bending. ad do this six times his week, ten times after that as you now stretching and across the front o , and expanding the Do not forget to all the time.

ll also build up these your chest; so wil hairs. "Dipping, sing yourself on the work for these t-arm work on the r back on the floor, h hand, and your ur sides, and then above your chert, is also good. And

of these exercises

y bald, isn't he?" nillionaire. "Yes,"

"I'm the only

"I wish I could write for the papers,

contributions. I happen to please were going."

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of debt and difficulty.

By M. E. BRADDON.

"LADY AUDLEY'S SECRET," "WYLLARD'S WEIRD, ' ETC., ETC.

HAPTER XIX.-THE RETURN OF PROSPERPINE.

NOW FIRST PUBLISHED.

hose veteran elms in Kensington Garwhose wind-blown crests were just hle from Helen's windows were older by re than a year and a half since that first section of the flat in Wilkie Mausions, Helen had grown accustomed to married anderstood by Valentine Belfield. had learnt to recognize the fact that he was fond of her, and proud of beauty, he had no idea of making any nearly five times and any one of his pleasures or re sitting still. The miles as much residence of his pleasures or resisting still. nger and fuller chest nger and fuller chest you willing that she should share them. ake a thousand of in the pook her to race meetings, and cricket ery day from work, very day from with him, but if her delicate go with him, but if her delicate alm kept her at home, that fact made no erence in his arrangements. There came ime when she was nervous and lowt shapely and strong, be gived, unable to go out of an evening, yet, digited, unable to go out of her loneliness almost them do their work far merable; but her husband frankly told ser and kidneys; indeed that she could not expect him to sacrifice that she could not expect him to sacrifice and kidneys; indeed the same to the stomack of the same to the sam sevening amusements—his whist club, or ans. It makes the bloom the rigor of the stres—because she was moping at the stres—because she was moping at

so enables it to do mon "What the deuce would be the good if I a bave your sister.

Not that work work "You talk as if Leo were laid on like the ner or the gas," Helen said, irritably; he has her evening engagements as well

> "Uncommonly selfish of her to be gadding gat just when you want her most," said har her sister at such a time.

its and silences irritated Valentine. was a relief to him to run down airs and get into the mild mugginess London autumn, to hail a cab, and de breathing. Do three off to his daily haunts at the West End: the whole of you. Next sailway which was to take him to some see you everywhere now." your mouth, but you had into mouth, but you had into month, but you had country house or snug bachelor den, retty women, or congenial men.

usly ill, and during some parts of that time would never ride when lansions. Lady Belfield came up to Longether." dstone and Lowell have in to watch over her daughter-in-law, and "When you are together no doubt, dear. eep in a green and use. when though she did not forego her evening fictitious interest." plenty of walking, and agagements, or desert Sandown Park. can. Try every now and attentive; but after the ill- let me manage my husband my own way." 258 had lasted a month his attentions relaxad, and he began to regard his wife's condi-

ot work. A man may ame out of the sick room, and went for an and sat brooding over her own troubles, no great chest. But hour's drive with Mrs. Baddeley, in the erally have fine chests, wetty little Victoria, which that lady had rge muscles on their and necessary to her existence. It was r high up over your hends, piteously; but it was a very smart es without stopping. It little carriage, with a smart coachman. Mrs. good chest exercise Biddeley's page sat beside him on the box, high your chest sud- and the turn-out was altogether respectable. The necessity for a Victoria, exchangeable a the evening for a brougham, was indis-

ptable, seeing that within the last twelve sonths Leonora Baddeley had become in mewise a public character. She had taka to literature. She wrote for the Society papers. Stories, essays, hunting articles, acing articles, fashion articles-nothing ame amiss to her facile and somewhat reckses pen. She wrote with the air of a woman who lived among duchesses, and who fined every night with Cabinet Ministers. Upon politics, morals, art, sport, finance, the wrote with equal authority, and a supreme audacity that dazzled the average

Nor was literature the grass widow s only occupation. She had burst upon the fashionable world as an amateur actress of disfinction and capacity. She gave recitations the charity concerts, she acted in open-air plays. She reminded elderly gentlemen indifferently of Mrs. Honey, Madame Vestris, and Mrs. Nesbitt. It was not to be supposed that she earned any money by these charity performances, and her gowns must have cost her a good deal; but as she was reported to be making a handsome income by literature, this did not matter, and nobody, except Helen, wondered at the elegant way in which Mrs. Baddeley contrived to uve, or at the open-handed and thoroughly

the right hand of the third-floor landing. hreplace, and its vases of tuber roses and home as he is."

lilies of the valley. winner, while you and Valentine are like the lilies of the field in neither toiling nor

them, and I have got into a groove that

suits me exactly." Helen sighed again. Valentine's way of life was expensive; and there were a good many accounts that ought to have been paid at Christmas, and which were still unpaid in April. Helen's walking gowns were shabby, and her evening gowns bore the stamp of last season; yet she dared not go to the milliner's lest she would be reminded of an account of some standing. First-class fares, tips to gamekeepers, and club subscriptions, to say nothing of that far deadlier item, losses at cards-had absorbed the cash that should have kept the little household in Wilkie Mansions clear

And now Helen came out of that little world of the sick room into the bright big world outside. She emerged out of darkness and weariness and constraint, like Proserpine returning from her six months' sojourn in the under-world. She was pale and thin and shadowy looking after her long illness, but the lovely Irish gray eyes were as brilliant as ever, and the mobile lips had their old charm and sweetness. Never had she looked fairer to the eyes of that connoisseur in beauty, Lord St. Austell, dowdy. than she looked this April afternoon, when Mrs. Baddeley's carriage drew up against t is about the best known to sit upon the other side of the fire lady time to talk to her friends. The pend keeping health in those large violet eyes, the sive light in those large violet eyes, the delicate transparency of the wild rose complexion, had a poetical charm which touch ed that sybarite fancy; and St. Austell looked from the elder sister to the younger, wondering how he could ever have thought Leonora Baddeley beautiful.

> He had heard of Helen's serious illness dentine. "It is a woman's place to look and of Valentine's neglect, and this alone would have given her an interest in his eyes. Helen sighed and was silent. Those Neglected wives had been his specialty from the year he left Christchurch.

He told her how rejoiced he was to see her out again after her long imprisonment. "It is like the awakening of a year," he said. "I really think this is the first perwas a still greater relief to sally forth fect spring day. You and our ideal April

"She is hardly strong enough yet to go "but I mean to take her about with me more The fond hopes which had soothed Helen than I have done hitherto. I shall not let coward. Thirdly, get the fond hopes which had soothed the bit to your lungs that you mes each day as you can. The fond hopes which had soothed the bit her play Joan to a husband who never plays be was a week old, and the shock of young man; but he is just one of those den train your chest and kiere he was a week old, and the shock of young man; but he is just one of those deto an extent that will be infant's death, which came upon her sud- lightful young men who should always remain bachelors. He has no vocation for

> "You have no right to say such a thing, is life was in danger. Trained nurses took Leo," said Helen, flushing indignantly. possession of that small habitation in Wilkie "You know how happy Val and I are to-

wed the same rule, and Mrs. Baddeley showed a great deal of solici- The rarity of the occurrence must give it a

"Oh, please keep your smart sentences for the first two or three weeks Valentine for the Macrocosm or the Bon Ton, Leo, and

Those bright spring days, which were one breatn will fill it. im as chronic. There was a dreary mono- full of gladness and animation for a good hing very small or weak my about the sick room which bored him many people at the West End of London, good endurance. The nurses in their uni- brought only dejection and apathy for Helen see if you can blow it simm, the recurrents visits of the doctor, the Belfield. She looked out of the window and ering as loudly as you sports from the sick nurse, forever fluctuat- saw the carriages driving by to the Park, singing as your neight between good and evil—the whole busi- or a hansom cab bowling gaily along the nd when singing, as a was hung upon Mr. Belfield's spirits like a street, with that rakish, devil-may care air said, "breathe from expetual nightmare. He was gladder than which seems inseparable from a hansom as far as you can in one fer to get away from his home, more eager | She listened drearily to the dreary street aring the hot season. han ever to accept invitations from his cries, borne from some invisible shabby genteel street round the corner. She lay on o. You are educating. All this had happened six months ago. her sofa by the open window yawning over gs in a most valuable. Helen had escaped from doctors and nurses a new novel, until she threw the book aside non after Christmas, but she seemed only in sheer weariness of fictitious woes and the chest, arm works he shadow of her former self when she first sorrows which touched no chord in her heart,

which seemed so very real. Valentine was at Sandown or Epsom; or at Newmarket, and not expected home for brck. Sl.p the backs aly a jobbed Victoria, as she told her a day or two. Last night she had waited dinner till nine o'clock-to-night it might be ten. He was not unkind to her. He professed to be as devoted to her as in the days of their honeymoon; and yet his indifference wounded her to the quick. He told her that a man must live his life—that marriage would be an insufferable institution if it obliged a husband to abandon his favorite club and to be home at eight o'clock every

"If you don't like waiting dinner, I had much dearer than Madame Bouillon." better dine at my club," he said. "I would rather do that than have to dine opposite

a funeral face." " No, indeed, Val, I don't mind waiting.

choly evening without you.' of friends is not always master of his dazzling fairness of the wearer's bust and

"But a woman's mind is not always to be governed by needs. I could not help son, but she had not been talked about. wondering. Sometimes I have wondered if This year it suddenly dawned upon that I had married your brother Adrian whether particular section of society—neither the

Adrian, if you are beginning to repent your been so promptly elevated to this social pinpreference for me," said Valentine, with a nacle if it had not been at the same period darkening countenance.

Irish hospitality of those pretty rooms on things. You know I have never repented. word to say against the lady as yet, but it I never could repent my choice. My heart | was obvious to everyone except to the lady "I can't think how it is that money goes went out to you from the first, and I knew herself, who saw nothing extraordinary in so much further with you than it does with that I had never really loved Adrian. He in the fact of his lordship's presence. She me," Helen said, with a faint sigh, as she had been to me as a kind and dear friend, knew that he was a man about town, and looked round her sister's luxurious little never as a lover. But I can't help some- she did not know that the circle in which drawing-room, with its profusion of tulips times wishing that you were like him in she and her sister moved, lay for the most and narcissus in the window sills and the just one respect—that you were as fond of part outside that inner sanctuary of patrician

"My dear, you forgot that I am a bread- was a man, and now you have got me you supreme indifference. He was her sister's would like me to be a milk-sop. No, Helen, admirer. He had been devoted to her sister I am as unlike Adrian in my tastes and at Moroomb two years ago, and she had no pursuits as I am like him in my person. I idea of any change in his sentiments. Leo's don't care for music, or books, or fireside flirtations and Leo's admirers were taken musings. I am a man of action, cannot live for granted by Leo's sister. There was no Begley: I've heard that Soakem is very "Everybody can't write for the papers, without movement and variety. If you are harm in any such deviations from the best sick this morning. child," Mrs. Baddeley answered rather there is something in the way of talent wanted, or at least knack. Besides, the papers of an evening if I knew where you been the papers of an evening if I knew where you been the papers.

Without movement and varied of war only Lee's way. Perhaps wise you'll fellow my example, and instead of warshipping a division of morning.

St. Austell was sired of warshipping a division of morning.

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St. Austell was sired of warshipping a division of morning.

you never came to any of my parties, I tions upon the younger. He would spend sat for a whole evening watching the door, and refusing every dance, for fear I should then come across to Mrs. Belfield's drawmiss you when you came in—and you never ing-room with a book or a piece of music, or

appeared." There was always something to prevent my gers, according to his own account.

turning up." you that made me detest parties. I made a incredulously, on one occasion when St again without you."

"Ah, that was last year when you were tickets." out of health. Now you are well and bloom. ing again, and it will do you good to see a jealous, and I know I can trust you."

the only man on earth."

"Well, I believe as much, Helen. You women who are not ashamed to admire many evening engagements." their own husbands. But really and truly, very pleasantest time of the year. Leo says | will you and Mrs. Baddeley really not mind you would be included in all her evening having me?" invitations if her friends only knew you were willing. You have but to show yourself to be admired and sought after."

Helen, blushing as she spoke.

" What is that?" "I have not had a new gown since last summer, and people dress so much now-a-I should feel myself an old-fashioned

"In last year's gown-although it cost meeting." five and thirty guineas and was declared by you and Leo to be perfection -quite the gown of the season," cried Valentine mockingly, and then he took out a bloated pocket-book, and from a confusion of tissue paper, Holt's lists and bank notes intermingled, he selected a note which he handed to his wife. "There, Helen, I was rather luckier then usual at Chester the other day. There's a fifty to sweeten Madame Bouillon. You might order two gowns, I should think, on the strength of it.

"I will," cried Helen gaily, overcome by her husband's generosity. " How good you are, Val."

"I like to see my little wife happy," he said blandly, not desming it necessary to inform her that he had over a thousand pounds in that bloated pocket book.

why should he tell her of his winnings. He had chosen for its adornment? left her with a kiss, and was of to his afternoon lounge at Tattersall's. He left her not into his mouth there were sport and good fellowship, everywhere," answered Mrs. Baddeley, happier than she had been since her con-

"Dear fellow," she said to herself, "I know he loves me, although he may sometimes seem neglectful."

skies generally are, the balmy west wind her fate. blowing the smoke eastward to darken the dwelling-places of the poor. Aristocratic London was dressed in smiles, suburban Kensington had a verdant and almost rustic air in the bright, glad weather, and Helen's drawing room was odorous with hot-house flowers.

Lord St. Austell had been sending her flowers two or three times a week since their chance meeting by the railing of the Row. He sent flowers and plovers' eggs and premature strawberries as to an invalid. Mrs. Baddeley heard of these attentions, and lifted her finely-pencilled eyebrows with a somewhat scornful air.

"He is more foolishly generous than anyone I know," she said. "He is always sending hot-house fruit and flowers to sick chorus girls.'

"I hope he does not rank you and me suppose it is he who supplies you with all those lovely gardenias and lilies of the val-

more than one string to my bow."

fifty pound note.

touched up—if I have just one new one in stand how you manage to have so many and from Mrs. Ponsonby, who is ever so

as she does other people. I know how to limits. At present the number of mines manage her," Leonora answered carelessly. existing in Sicliy is about three hundred have never complained of having to wait, Helen's was a style of beauty which needed on credit, are, it is understood, destined to so long as you do come home. But some no embellishment from colour. She always an early demise. It is said that there are times you have disappointed me altogether, looked loveliest in white, and this last about 30,000,000 tons of sulphur in Sicily you have gone to a theatre or to one of your achievement was simplicity itself. A white at present, and that the annual production late clubs, and have left me to wonder and satin gown, plainly cut, with a long train, amounts to about 400,000 tons. If this worry all the evening-such a long melan- and with no other trimming than a cascade should be true, taking the foregoing as of ostrich feathers, soft and pure as snow-"You had no need to wonder and worry. flakes. A cluster of these snow white plumes about seventy-five years. You must know that a man who has a lot adorned the bodice, and accentuated the

shoulders. Mrs. Belfield had been admired last seashould have had quite so many solitary best nor the worst-in which Mrs. Baddeley moved, that Mrs. Belfield was the new "It's a great pity you did not marry beauty. Perhaps she would hardly have discovered that St. Austell was over head only keep him beyond their reach, I thin "Dearest Val, how can you say such and ears in love with her. Nobody had a he will get well rapidly."

"In other words you loved me because I She accepted his attentions at first with my fortune is made." the papers are not big enough to hold every- you up of an evening if I knew where you Beeching for instance, among the most devoted. He certainly began to neglect the Wagley : No wonder he feels queer, then. | that's what makes it so warm."

"You promised that last year, Val, and elder sister, and to concentrate his attenfive or ten minutes with Mrs. Baddeley, and tickets for opera or theatre-tickets which "It wasn't my fault, I assure you. had been sent him by importunate mana-

"I was told last night that people had to "I think it was my disappointment about wait six weeks to get stalls," Helen said, vow to myself that I would never go out Austell brought her three places for a fashionable theatre, "and yet the manager gives

"Strange, isn't it. The fellow will send

"He would be delighted, but I'm afraid spice mills, are among the many examples of are one of those foolish lovable young there's no chance of his going. He has so the action of a similar cause; but perhaps

"How could we be so ungrateful."

Belfield? Just tell me, my society won't tha having been permitted to escape into the spoil your evening."

"How can in, when we meet almost every evening," Helen answered, naively. didn't wish to see you I should never go anywhere, for somehow or other we are always

cers," said St. Austell. " You must needs meet the same people over and over again. Meeting and passing on; and the last chord severs one even from one's own partner."

When was the time that Helen began to watch the door for the appearance of Lord St. Austell, as she had once watched for the coming of her husband, only that in this latter case there was no disappoinment? When was it that the assembly first began to brighten at his coming ; when was it that his voice first began to move her like music? When was it that the day only began in that lazy afternoon hour when etiquette allowed his lordship's visits to the Japanese drawingroom, which daily looked more and more like a tropical bower, beautified by the flowers which he sent every morning, musi-He never worried her about his losses, so cal with the rare and costly birds which he

He could never remember how and when her sin began: how it was that she passed from the liberty of perfect innocence to the constraint of conscious guilt: but she awakened one day to the discovery that the husband she once adored had become indifferent and was growing odious to her, and that It was a lovely afternoon at the beginning the man who pursued her with unspoken of May. The sky was bluer than London love was the sole master of her heart and of

(TO BE CONTINUED.

GREAT SULPAUR MINES.

Thirty Million Tons of Brimstone in one Island.

Sulphur is of two kinds, one of which of volcanic emanation, the other being closely allied to sedimentary rocks. The latter is found in Sicily, on the southern and central portions of the island. Mount Etna, situated in the East, seems to exert no influence in the formation of brimstone. There are various hypotheses relative to its natural formation. Dr. Philip Swarzenburg attributes it to the emanations of sulphur vapor expelled from metallic matter existing in the earth, consequent upon the fire in the latter, while Proessors Hoffman and Bischoff ascribe it to the decomposition of sulphureted hydrogen. Hoffman believes the sulphureted hydrogen must have passed through the fissures of stratified rocks, but Bischoff is of opinion "He and other people, my dear. I have that the sulphureted hydrogen must have been the result of the decomposition Helen ran across to her sister's rooms soon sulphate of lime in the presence of organic after Valentine left her, and exhibited her matter. The theory of others is that sulphur owes its origin to the com "If you like to take me out with you this bination of lacustrine deposits with ve afternoon, Leo, I can order a new gown, and getable matter, and others again suppose then I can go with you to some of your that it is due to the action of the sea upon animal remains. The huge banks of rock "Certainly, dear, but one gown won't go salt, often met with in the vicinity of sulphur mines, and which in some place stretch "Ob. I can have some of the old ones for a distance of several miles, seem to indicate that the sea has worked its way into the very latest style, with the season's cach- subsoil. Fish and insects which are frequent-Even one gown is an effort when one ly found in strata of tripoli, which lie has a limited income. I can never under, under sulphur beds, induce the belief that

lakes existed in Sicily. Sulphurmines have been operated in Sicily over three hundred years, but until the year "Oh, Mrs. Ponsonby does not charge me 1820 its exportation was confined to narrow The new gown was a triumph of art. nearly two hundred of which, being operated basis, the aupply will become exhausted in

Medical Aid.

Neighbor-"How is your husband to-day. Mrs. Jones?" Mrs. Jones—"He is very ill, indeed."

"Worse than he was?" "O, yes; the nurse says he is beyond the reach of doctors now." "I'm glad to hear it."

" What?"

"I'm glad to hear it. Now, if you can

On the Road to Fame Friend (to young physician)-"How are

you getting on professionally, doctor ?" Young physician-"Famously. Since I was fortunate enough to be called into the case of old Mr. Trillion, my reputation has rapidly extended; another case like that and

Friend—"But Mr. Trillion died." Young physician-"That doesn't matter.

They Were not Friends.

FRIEND AND ALEO ENEMY.

An Account of the More Important Modern High Explosives.

Few would imagine, as they watch the coal quietly glow and consume away in the grate, that there are present all the materials necessary for producing an explosion; yet such is the case, and it has been found that the ignition of coal-dust laden air is a not infrequent source of disastrous explosions in coal mines.

What has occurred with coal may occur me tickets. They like to see me in the with any combustible solid which is finely little bit of life. If I were a jealous hus- stalls. By-the-bye, that is just the objection pulverized and suspended in air, and in this band I should be very glad for you to shut to those tickets. You will have me as an manner the explosions of flour which destroyyourself up in these rooms, but I'm not incubus. It would be bad form to accept the ed several flour mills in Minneapolis in 1878 places and not show myself. If you and are accounted for. The explosions of saw-"Indeed, dearest, you can," she said Mrs. Baddeley go, will you much mind dust in the Pullman car shops and at Gelfondly, with ber hands clasped upon his taking me, or perhaps Mr. Belfield might dowsky's furniture factory, the explosions of shoulder, "you know that for me you are go with you, and would let me make a starch in a New York candy factory, of rice in rice mills, and of dust in breweries and the most ususual case of this class of explo-"Of course. I know his set. Men who sions was that of finely powdered zinc, which my pet, it grieves me to see you mope in the always spend their evenings together. And occurred in 1854 at the Bethlehem zinc works.

Two British men-of-war, the Doterel and the Triumph, have been blown up, owing to the presence on board of a dryer for paints "Oh, but I won't come if I am to be asked of which benzine formed a part; and the serout of gratitude. That would make me jous explosion in Pawtucket and the more "There is one objection, Val," murmured actually an incubus. May I come, Mrs. disastrous one in Rochester, arose from naph.

> The modern high explosives are bodies which contain within their molecules the elements necessary for ordinary combustion, while at the same time they are more or less endothermous; and the best example, and "Society is like the last figure of the Lan- perhaps the most important, of these is the mercury fulminate. This substance was discovered by Howard in 1800, and was made by dissolving mercury in nitric acid and pouring the solution into alcohol. Its discovery aroused the liveliest interest, and it was immediately tested by firing in a musket, but, though it imparted very little velocity to the projectile, and produced only a slight recoil and report, it burst the barrel of the piece completely open; and hence it was relegated to the position of a chemical curiosity until recalled for use as a priming for percussion

> > Its adaptation to modern uses began in 1863, when Nobel discovered that by the explosion of a few grains of this substance nitro-glycerine might be detonated, and was extended 1868, when Mr. E. O. Brown discovered that not only could dry gun cotton be detonated by this means, but that if a small initial mass of dry gun cotton was detonated in contact with a mass of wet cotton, the latter would be also detonated, even though it were completely saturated with

> > Baron von Lenk of Austria took up the study of this material in 1853, and his efforts to perfect the methods of manufacture and to moderate the violence of the gun charges were attended with such apparent success that a special battery of 12 pounders was constructed for use with it, and the position of the explosive seemed assured, until 1865, when his magazines blew up spontaneously, and the article was interdicted by the Gov-

> > While the Austrian experiments were going on, Abel, the chemist to the War Department of Great Britain, was also engaged in the study of the properties of this substance, and the same year in which Austria proscribed the article he announced the invention of the process by which its manufacture has since been successfully carried on.

Gun cotton constitutes the best military explosive known, for, while its explosive force vastly exceeds that of gunpowder and approaches that of nitro-glycerine, it is the safest an 1 most stable explosive we possess, since it can be stored and transported wet; and, when in this state, though it may be deconated as described above, it cannot be exploded in any other way. As much as 2,-000 pounds of wet compressed gun cotton have been placed in a fierce bonfire, where it has gra lually dried, layer by layer, and been consumed without exploding. Besides, gun cotton is the only military explosive which can be detonated with certainty when frozen. In calling it a military explosive I mean, of course, for use in torpedoes and for military mining, and not as a substitute for gunpowder in guns; but it may be, and has been, successfully used as a charge for shells fired from gunpowder guns both in this country and abroad. Shells containing as much as 110 pounds of gun cotton have been repeatedly fired in Germany.

The most prominent rival of gun cotton for military uses and the best explosive for industrial purposes, is nitro glycerine and the mixtures of which it forms a part. This substance was discovered by Sobrero in 1847, while carrying out a series of experiments under Pelouze. Its liquid form makes it difficult to store and transport, and permits it to find its way into unexpected places, where it constitutes a source of danger. Considerations such as these led Nobel, about 1867. to invent dynamite. The name is now applied to a great variety of nitro-glycerine mixtures, but they all consist of a porous solid absorbent which sucks up the liquid nitro-glycerine by capillarity and holds it in

its pores or interstices. The most important nitro-glycerine mixture is explosive gelatine, also invented by Nobel. This is made by heating nitro-glycerine on a water bath and adding to it from

7 to 10 per cent, of soluble gun cotton. The largest single charges ever fired were employed in the blowing up of Hallett's Reef and Flood Rock. In the latter, which occurred Oct. 10, 1885, the charge consisted of 240,399 pounds of rack-a-rock, and 48,537 pounds of dynamite No. 1, yet so nicely was this enormous charge calculated for the work it was to do, that beyond breaking down the rock, tossing up an enormous body of water to a height (estimated for the tallest jet) of 160 feet, and generating an earth-wave which was observed as far east as Cambridge, Mass., it produced no visible effect.

A Terrible Disease.

O'Toole-" Well, well, Mrs. McCarthy An' how have been since before the long Winter we had, I dunne ?" Mrs. McCarthy-" Oh, it poorly, sure ! The docther said I had an ulster on me tonuls and not to go out in the cold, so he did.

What Made It Hot.

He (shortly after marriage)-" It is fearful bot in this room. "She-"I have just been burning a lot of letters I got before I was married. Perhaps